



1
00:00:20,920 --> 00:00:25,150
in the summer of nineteen sixty-two
final preparations were underway for the

2
00:00:25,150 --> 00:00:29,619
first u_s_ attempt to reach earth's
nearest planetary neighbor

3
00:00:29,619 --> 00:00:34,920
phoenix provided the best chance for a
spacecraft to reach its destination

4
00:00:34,920 --> 00:00:36,830
the space craft though

5
00:00:36,830 --> 00:00:41,770
what jpl engineers had first planned on
sending

6
00:00:41,770 --> 00:00:43,900
that it was to be in the design

7
00:00:43,900 --> 00:00:46,490
will this second generation space craft
that

8
00:00:46,490 --> 00:00:50,440
was specifically designed to go to mars
and venus

9
00:00:50,440 --> 00:00:54,340
design was also on off long for that to
be used for the the is sixty two

10
00:00:54,340 --> 00:00:55,570
opportunity

11
00:00:55,570 --> 00:01:00,320
so we actually took a ranger with all

the marijuana into the first to merit

12

00:01:00,320 --> 00:01:05,800

missions as he does but they worry just
base right not many people know that

13

00:01:05,800 --> 00:01:07,830

then one night stand

14

00:01:07,830 --> 00:01:13,090

and on july twenty second nineteen sixty
two

15

00:01:13,090 --> 00:01:15,340

first of all what

16

00:01:15,340 --> 00:01:22,340

hamas rocket accelerated through mock
one

17

00:01:23,960 --> 00:01:30,960

then me and listening and reading and
hearing on

18

00:01:31,260 --> 00:01:32,710

victory

19

00:01:32,710 --> 00:01:34,160

israeli radio

20

00:01:34,160 --> 00:01:36,110

entire dot

21

00:01:36,110 --> 00:01:39,820

manner was only seconds away from
separating from the air and market

22

00:01:39,820 --> 00:01:45,950

when the range safety officer had no

choice but to give the construct connect

23

00:01:45,950 --> 00:01:47,990

no

24

00:01:47,990 --> 00:01:51,350

dance

25

00:01:51,350 --> 00:01:53,760

parat

26

00:01:53,760 --> 00:01:56,789

analysis showed that the cause of the
rocket failure

27

00:01:56,789 --> 00:01:58,990

was a software error

28

00:01:58,990 --> 00:02:01,580

a single misplaced symbol of cold

29

00:02:01,580 --> 00:02:05,370

and resulted in the loss of the first
u_s_ space craft

30

00:02:05,370 --> 00:02:08,759

destined for another planet

31

00:02:08,759 --> 00:02:11,800

results show a little bit about our
knowledge we had another when they go

32

00:02:11,800 --> 00:02:13,769

will maybe we can reserve

33

00:02:13,769 --> 00:02:16,899

resurrects these years i think i should
put all these days

34

00:02:16,899 --> 00:02:23,109

in in into that

35

00:02:23,109 --> 00:02:25,279

software

36

00:02:25,279 --> 00:02:32,279

manner to the standoff begins
three-and-a-half months journey defeats

37

00:02:32,480 --> 00:02:33,739

your sister

38

00:02:33,739 --> 00:02:37,489

when you first heard it on out there
like telling her she was working fine

39

00:02:37,489 --> 00:02:41,299

who is working in a much lower level
sensitivity and then we head

40

00:02:41,299 --> 00:02:44,099

uh... designed into it

41

00:02:44,099 --> 00:02:48,150

actually got far far away from earth we
knew that this has to be seems like

42

00:02:48,150 --> 00:02:51,949

that's he wouldn't be able to stay are
like ten years to all the way to the

43

00:02:51,949 --> 00:02:55,349

plantings

44

00:02:55,349 --> 00:02:58,489

as mariner to raced away from her

45

00:02:58,489 --> 00:03:01,629
the signal strength continued to lower

46
00:03:01,629 --> 00:03:06,999
if the signal could not be boosted all
communications would soon cease

47
00:03:06,999 --> 00:03:09,319
there would be no science return

48
00:03:09,319 --> 00:03:12,359
only another mission failed

49
00:03:12,359 --> 00:03:17,409
just a few days before it live stocks
did be able to track

50
00:03:17,409 --> 00:03:21,149
ceo st jumped up to her we designed it

51
00:03:21,149 --> 00:03:28,149
and we were able to do the rest of this
mission is five newsletter shack

52
00:03:33,629 --> 00:03:38,699
another pressing issue was keeping
mariner to one of proper course

53
00:03:38,699 --> 00:03:39,939
good afternoon

54
00:03:39,939 --> 00:03:44,519
if you decided to go ahead with the
introductory

55
00:03:44,519 --> 00:03:48,240
goldwell engineers several and article
and

56

00:03:48,240 --> 00:03:49,859
living around

57
00:03:49,859 --> 00:03:53,049
the motorist fire

58
00:03:53,049 --> 00:03:55,259
manual dot on dot

59
00:03:55,259 --> 00:03:57,279
dollywood

60
00:03:57,279 --> 00:04:04,279
you're talking to you

61
00:04:04,729 --> 00:04:08,489
for one hundred days j_p_l_ ours worked
around the clock

62
00:04:08,489 --> 00:04:15,489
steadying what was becoming an ever more
troublesome spacecraft

63
00:04:15,879 --> 00:04:17,570
one of the members of the team

64
00:04:17,570 --> 00:04:21,180
was a twenty two-year-old flight
controller who was both a pioneer in

65
00:04:21,180 --> 00:04:23,400
exploring the planets

66
00:04:23,400 --> 00:04:27,749
and venturing into the male dominated
world of engineering

67
00:04:27,749 --> 00:04:29,110
i found myself

68

00:04:29,110 --> 00:04:35,340

not only involved in the planning of the operations but the actual conduct

69

00:04:35,340 --> 00:04:40,810

of the operations and before i knew it harmless twenty-two

70

00:04:40,810 --> 00:04:44,260

and i'd have been assigned this one

71

00:04:44,260 --> 00:04:48,189

several flight controllers somewhere in there too

72

00:04:48,189 --> 00:04:49,169

understood

73

00:04:49,169 --> 00:04:50,179

at that work

74

00:04:50,179 --> 00:04:51,219

understood it

75

00:04:51,219 --> 00:04:52,969

operations work

76

00:04:52,969 --> 00:04:54,419

i have a shift

77

00:04:54,419 --> 00:04:58,979

apply on usually midnight they the market

78

00:04:58,979 --> 00:05:04,439

women didn't have opportunities like that and

79
00:05:04,439 --> 00:05:10,639
there were some number of people who are
pretty sure that they shouldn't

80
00:05:10,639 --> 00:05:12,760
was probably the

81
00:05:12,760 --> 00:05:17,919
largest experiencing growing up annually
for him

82
00:05:17,919 --> 00:05:19,349
hike up through it

83
00:05:19,349 --> 00:05:23,580
and i was very proud of myself for
getting through it

84
00:05:23,580 --> 00:05:24,699
uh...

85
00:05:24,699 --> 00:05:26,249
but from then on

86
00:05:26,249 --> 00:05:31,509
everything seemed easier

87
00:05:31,509 --> 00:05:35,650
in december mariner too was closing in
fast on these

88
00:05:35,650 --> 00:05:37,889
but it was in a precarious state too

89
00:05:37,889 --> 00:05:40,400
portions of the space craft for
overheating

90

00:05:40,400 --> 00:05:44,580
several critical telemetry sensors had
stopped working altogether

91
00:05:44,580 --> 00:05:48,179
it was taking all the energy the solar
panels could produce to keep the

92
00:05:48,179 --> 00:05:51,250
spacecraft functioning

93
00:05:51,250 --> 00:05:56,030
on december fourteenth mariner to make
its closest approach to the news flying

94
00:05:56,030 --> 00:06:00,139
by in the distance of twenty thousand
marks

95
00:06:00,139 --> 00:06:05,210
in pasadena a steady stream of science
data came pouring back as portables

96
00:06:05,210 --> 00:06:11,819
sounds throughout mission control are

97
00:06:11,819 --> 00:06:13,560
scientists were killing

98
00:06:13,560 --> 00:06:19,019
although most of the results were more
confirmations from you discover

99
00:06:19,019 --> 00:06:24,180
there was no on-board camera so there
were no pictures

100
00:06:24,180 --> 00:06:29,630
there was also no sign of a magnetic
field of more radiation felt like hertz

101

00:06:29,630 --> 00:06:34,220

for a planet considered first went in
for its size and your proximity

102

00:06:34,220 --> 00:06:39,629

venus revealed itself to be a hellish
world filled with carbon dioxide

103

00:06:39,629 --> 00:06:46,629

and where surface temperatures are hot
enough to melt away

104

00:06:48,389 --> 00:06:50,689

if the science returns models

105

00:06:50,689 --> 00:06:54,539

the public reaction to the technical
achievement was enormous

106

00:06:54,539 --> 00:06:58,909

for the first time the united states
could point to its first first in the

107

00:06:58,909 --> 00:07:01,449

race for the states

108

00:07:01,449 --> 00:07:05,759

it is a fraud time for the u_s_ time
magazine for plane

109

00:07:05,759 --> 00:07:09,509

know what she meant by russian
cosmonauts for u_s_ astronauts

110

00:07:09,509 --> 00:07:13,539

no experiment made by any of the myriad
other satellites that have been shot

111

00:07:13,539 --> 00:07:20,539
aloft has talked manually so much is the
improbable voyage of mariner too

112
00:07:20,639 --> 00:07:24,770
william pickering found himself featured
on the cover of time

113
00:07:24,770 --> 00:07:29,479
pasadena honored the j_p_l_ director by
naming him grand marshal of the

114
00:07:29,479 --> 00:07:36,479
tournament of roses correct

115
00:07:37,080 --> 00:07:40,970
nasa arranged for pickering and his
management team to meet john kennedy at

116
00:07:40,970 --> 00:07:43,440
the white house

117
00:07:43,440 --> 00:07:44,639
in the oval office

118
00:07:44,639 --> 00:07:50,300
they presented the president with a
model of the space craft

119
00:07:50,300 --> 00:07:52,720
twenty days after passing penis

120
00:07:52,720 --> 00:07:55,870
aruna to transmitted half an hour of
telling a tree

121
00:07:55,870 --> 00:07:58,189
and then went silent

122

00:07:58,189 --> 00:08:04,129

today the space craft is a mute piece of
metal that endlessly circles the south

123

00:08:04,129 --> 00:08:06,870

but inside the space craft thermal
blanket

124

00:08:06,870 --> 00:08:09,120

is a small american flag

125

00:08:09,120 --> 00:08:12,229

secretly placed aboard against official
wishes